

### ABSTRACT OF THE DISCLOSURE

Methods for reducing and eliminating carbon dioxide from the emissions of solid fuel fired power plants, particularly coal fired power plants, and to sequester the carbon dioxide, typically by using existing equipment. In some embodiments, the methods involve pyrolyzing the solid fuel to remove volatile matter and using the volatile matter to produce hydrogen. Additionally, the methods may involve burning the solid fuel or pyrolyzed solid fuel at very fuel rich stoichiometric conditions. Sequestration may include the production of a carbon dioxide-containing solution and the pumping of the solution into the ground, particularly in areas high in limestone.

\\COM\395652.3